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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,091	01/16/2002	Michelle T. Lam	884.710US1	9862

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EXAMINER

BROWN, KHALED

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,091

Applicant(s)

LAM MICHELLE

Examiner

Khaled Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Specification

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 (second instance) is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 appears twice, a first and second instance, respectively. The second instance of claim 23 depends from itself and is therefore indefinite because the scope of the claim cannot be determined.

As best the examiner is able to ascertain the following rejections are made:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Keil (US 6134975).

Re clm 1: Keil discloses an apparatus comprising: a transparent plate (1) with an upper surface (1d), and a plurality of spaced apart fiducials formed on the upper surface at locations corresponding to desired die locations (3).

Re clms 2,7: glass (Col 2 line 67)

Re clms 3,8: quartz (Col 2 line 67)

Re clm 6 : Keil discloses an apparatus comprising: a transparent plate (1) adapted to be positioned beneath a panel having transparent segments ("testing board" Col 3 line 25) so that a die suspended above the panel and having a die alignment mark can be aligned and positioned relative to at least one of the fiducials (Col 3 lines 19-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keil (US 6134975) in view of Woodhouse (US 5537204).

Re clm 9: Keil discloses the claimed invention as noted above including fiducials.

However, Keil does not disclose the fiducials are made of chrome. Woodhouse teaches that fiducials should be made of chrome because it allows alignment of fiducial marks located on two different objects (Col 1 line 65 – Col 2 line 1).

Claims 4,5,10-13, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keil (US 6134975) in view of Kwong (US 6487083).

Re clms 10, 15, 21, 24: Keil discloses an apparatus comprising: a movable pick-up head, a panel support member (Keil inherent in the pick and place device disclosed Col 1 lines 48-58), a transparent plate with fiducials arranged at locations corresponding to desired die locations (Keil 1), the transparent plate arranged adjacent the panel support plane opposite the movable pick-up head and an optical vision system (Keil Col 5 line 60 – Col 6 line 5). However, Keil does not specifically disclose that the panel has an array of cavities. Kwong teaches that a glass panel should have an array of cavities because it aides in the accurate placement of components on a panel (Kwong Col 10 lines 10-30). Therefore, it would have been obvious to a person of ordinary skill in the

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art at the time the invention was made to add an array of cavities to the panel of Keil because it would aide in the accurate placement of components on the panel as taught by Kwong.

Re clms 4, 20: lithography (Kwong Col 10 lines 13-15)

Re clm 11: The examiner takes official notice that assembly robots use controllers electrically connected to the pick-up head and optical vision system.

Re clm 12: glass (Keil Col 2 line 67)

Re clm 13: quartz (Keil Col 2 line 67)

Re clms 16, 18, 23 (first occurrence): determining a position of the die relative to the local fiducial (Keil Col 3 lines 19-31)

Re clm 17: electrical signal (Keil Col 4 line 39 produced by "camera")

Re clms 19, 22, 23(second occurrence): inserting a die into a cavity (Kwong Col 2 line 61) and contacting the die (Keil Col 2 line 8)

Re clm 5: the combination system of Keil and Kwong discloses the claimed invention except for stating that the placing of the fuducials have a placement accuracy equal to or less than 2 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the fuducials having a placement accuracy equal to or less than 2 microns, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mueller 6055049 (Shows controller connected to pick-up head and optical vision system), Biggs et al 4776088 and Larson 6085573.


Note: No IDS has been filed in this case.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khaled Brown whose telephone number is 703-306-5738. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 703-308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

KB
May 16, 2003



Frank Font
Supervisor Art Unit 2877